CLAIMS

1. (Original): A cell culture substrate coated with a hydrophobic binding-absorptive polymer having a hydrophobic linear skeleton and a functional group that can react to a protein or a peptide in a molecule.

2. (Original): The cell culture substrate according to claim 1, wherein a base material of the cell culture substrate comprises a biobased polymer, plastic, natural or synthetic rubber, an inorganic material or metal.

3. (Original): The cell culture substrate according to claim 2, wherein the biobased polymer is collagen, gelatin, cellulose, agarose, alginic acid, chitin, chitosan, or a biodegradable polymer, which is, polylactic acid, polybutylente succinate, or polycaprolactone.

4. (Original): The cell culture substrate according to claim 2, wherein the plastic is a thermoplastic resin or a thermosetting resin.

5. (Original): The cell culture substrate according to claim 4, wherein the thermoplastic resin is an acryl resin, a polyvinyl chloride resin, a polyethylene resin, a polystyrene resin, a polypropylene resin, a polymethylpentene resin or a fluorocarbon resin.

6. (Original): The cell culture substrate according to

claim 4, wherein the thermosetting resin is a phenolic resin, a urea formaldehyde resin, an epoxy resin, a melamine resin or a silicone resin.

7. (Original): The cell culture substrate according to claim 2, wherein the synthetic rubber is butadiene-styrene rubber, butadiene-acrylonitrile rubber, butyl rubber, polysulfide-based synthetic rubber, fluorocarbon rubber or silicone rubber.

8. (Original): The cell culture substrate according to claim 2, wherein the inorganic material is glass, hydroxyapatite, IC substrate or carbon nanotube.

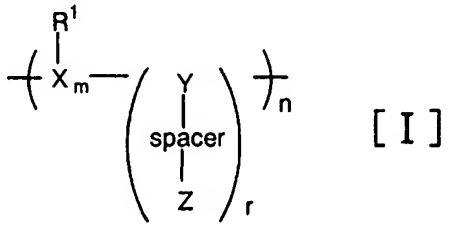
9. (Original): The cell culture substrate according to claim 2, wherein the metal is inert gold, platinum, titanium, indium, or an oxide thereof which is titanium oxide, indium oxide, or ITO (indium tin oxide).

10. (Previously presented): The cell culture substrate according to claim 1, wherein the cell culture substrate is a well, a printed-wiring board, or an artificial organ.

11. (Original): The cell culture substrate according to claim 10, wherein the artificial organ is an artificial blood vessel, an artificial heart lung, or an artificial kidney.

12. (Previously presented) The cell culture substrate according to claim 1, wherein the cell culture substrate is a well comprising silicone as a base material.

13. (Previously preseted) The cell culture substrate according to claim 1, wherein the hydrophobic binding-adsorptive polymer is shown by the following formula [I]:



[I]

(wherein, X denotes CH or NHCHCO, Y denotes CH or $NHCR^2CO$, R^1 denotes H, alkyl group of carbon number 1 to 10, alkoxy group of carbon number 1 to 10, aryl or aralkyl group of carbon number 6 to 10, or aryloxy or aralkyloxy group of carbon number 6 to 10, R^2 denotes H or alkyl group of carbon number 1 to 10, Z denotes a functional group (reactive group) and is optionally bonded to X reciprocally, spacer denotes $(-CH_2-)p$ or $(-NHCHR^3CO-)q$, R^3 denotes H or alkyl group of carbon number 1 to 10, m denotes an integral number greater or equal to 1, n denotes an integral number between 100 and 20000, p and q independently denote 0 or integral numbers 1 to 8, and r denotes an integral number greater or equal to 1).

14. (Original): The cell culture substrate according to claim 13, wherein the hydrophobic binding-adsorptive polymer shown by the formula [I] is a copolymer made of a vinyl-based compound and maleic anhydride.

15. (Original): The cell culture substrate according to claim 14, wherein the vinyl-based compound is methyl vinyl ether, ethyl vinyl ether, butyl ether, hexyl vinyl ether or styrene.

16. (Currently amended): ~~A solidified~~ An immobilized preparation of a cell adhesion protein or peptide wherein the cell adhesion protein or peptide is bound to the cell culture substrate according to claim 1.

17. (Currently amended): The ~~solidified~~ immobilized preparation according to claim 16, wherein the binding is covalent bonding formed by a reaction between a functional group, which is capable of reacting to a protein or a peptide, of a hydrophobic binding-adsorptive polymer and a reactive group of a cell adhesion protein or peptide.

18. (Currently amended): The ~~solidified~~ immobilized preparation according to claim 17, wherein the covalent bonding is amide bonding.

19. (Currently amended): The ~~solidified~~ immobilized preparation according to claim 16, wherein the cell adhesion protein is fibronectin (FN), collagen (Col), laminin (LN) or vitronectin (VN).

20. (Currently amended): The ~~solidified~~ immobilized preparation according to claim 16, wherein the cell adhesion peptide is a peptide in a region relating to cell adhesion in an amino acid sequence of the cell adhesion protein.

21. (Currently amended): The ~~solidified~~ immobilized preparation according to claim 20, wherein the peptide in a region relating to cell adhesion of fibronectin (FN) protein is a peptide having a specific Arg-Gly-Asp (RGD) amino acid sequence which binds to an integrin receptor on a cell side.

22. (Currently amended): The ~~solidified~~ immobilized preparation according to claim 21, wherein the peptide having an RGD amino acid sequence is Tyr-Ala-Val-Thr-Gly-Arg-Gly-Asp-Ser-Pro-Ala-Ser (FIB-1).

23. (Currently amended): The ~~solidified~~ immobilized preparation according to claim 20, wherein the peptide in a region relating to cell adhesion of laminin (LN) protein is an a-chain G-domain peptide.

24. (Currently amended): The ~~solidified~~ immobilized preparation according to claim 23, wherein the G-domain peptide is

Arg-Lys-Arg-Leu-Gln-Val-Gln-Leu-Ser-Ile-Arg-Thr (AG73),
Leu-Gln-Gln-Arg-Arg-Ser-Val-Leu-Arg-Thr-Lys-Ile (AG73T),
Thr-Leu-Gln-Leu-Gln-Glu-Gly-Arg-Leu-His-Phe-Met (AG76.8),
Thr-Leu-Gln-Leu-Gln-Glu-Gly-Arg-Leu-His-Phe-Nle (AG76.8X),
Val-Lys-Thr-Glu-Tyr-Ile-Lys-Arg-Lys-Ala-Phe-Met (AG81.2),
Val-Lys-Thr-Glu-Tyr-Ile-Lys-Arg-Lys-Ala-Phe-Nle (AG81.2X),
Lys-Asn-Arg-Leu-Thr-Ile-Glu-Leu-Glu-Val-Arg-Thr (A2G73),
Lys-Pro-Arg-Leu-Gln-Phe-Ser-Leu-Asp-Ile-Gln-Thr (A3G72),
Lys-Phe-Leu-Glu-Gln-Lys-Ala-Pro-Arg-Asp-Ser-His (A4G73),
Gly-Glu-Lys-Ser-Gln-Phe-Ser-Ile-Arg-Leu-Lys-Thr (A4G78),

Thr-Leu-Phe-Leu-Ala-His-Gly-Arg-Leu-Val-Phe-Met (A4G82),
Thr-Leu-Phe-Leu-Ala-His-Gly-Arg-Leu-Val-Phe-Nle (A4G82X),
Gly-Pro-Leu-Pro-Ser-Tyr-Leu-Gln-Phe-Val-Gly-Ile (A5G71),
Arg-Asn-Arg-Leu-His-Leu-Ser-Met-Leu-Val-Arg-Pro (A5G73),
Arg-Asn-Arg-Leu-His-Leu-Ser-Nle-Leu-Val-Arg-Pro (A5G73X),
Leu-Val-Leu-Phe-Leu-Asn-His-Gly-His-Phe-Val-Ala (A5G77),
Leu-Val-Leu-Phe-Leu-Asn-His-Gly-His (A5G77f),
Lys-Asn-Ser-Phe-Met-Ala-Leu-Tyr-Leu-Ser-Lys-Gly (hA3G75) or
Gly-Asn-Ser-Thr-Ile-Ser-Ile-Arg-Ala-Pro-Val-Tyr (hA3G83).

25. (Currently amended): The ~~solidified~~ immobilized preparation according to claim 20, wherein the cell adhesion peptide is a peptide comprising 3 to 20 amino acid residues.

26. (Currently amended): A method for producing ~~a solidified~~ an immobilized preparation wherein a functional group, which is capable of reacting to a protein or a peptide, of a hydrophobic binding-adsorptive polymer coated on a cell culture substrate reacts to a cell adhesion protein or peptide.

27. (Currently amended): A method for producing ~~a solidified~~ an immobilized preparation wherein a functional group, which is capable of reacting to a protein or a peptide, of a hydrophobic binding-adsorptive polymer reacts to a cell adhesion protein or peptide, and a cell culture substrate is coated with the reactant.

28. (Original): A reactant obtained by reacting a functional group, which is capable of reacting to a protein or a peptide, of a hydrophobic binding-adsorptive polymer, to cell

adhesion proteins or peptides.

29. (Currently amended): An artificial tissue prepared by seeding a desired cell on the ~~solidified~~ immobilized preparation of a cell adhesion protein or peptide according to claim 16, and culturing the cell.

30. (Original): The artificial tissue according to claim 29, wherein the desired cell is an epithelial cell, an endothelial cell or a mesenchymal cell.

31. (Original): The artificial tissue according to claim 30, wherein the epithelial cell is an epidermal cell, a corneal epithelial cell, an alveolar epithelial cell, a mucosal epithelial cell of digestive system, a renal glomerular epithelial cell or a hepatic parenchymal cell.

32. (Original): The artificial tissue according to claim 30, wherein the endothelial cell is a renal glomerular ciliated cell, a vascular endothelial cell, a pulmonary arterial vascular endothelial cell, a placental venous vascular endothelial cell or an aortic endothelial cell.

33. (Original): The artificial tissue according to claim 30, wherein the mesenchymal cell is a muscle cell, an adipocyte, a glial cell, a Schwann cell or a neural cell (neuron).

34. (Previously presented): The artificial tissue according to claim 29, wherein the artificial tissue is an artificial epidermal tissue, an artificial corneal epithelial

tissue, an artificial alveolar epithelial tissue, an artificial respiratory epithelial tissue, an artificial renal glomerular tissue, an artificial hepatic parenchymal tissue or an artificial vascular endothelial tissue, or an artificial blood vessel, an artificial lung, an artificial liver, an artificial kidney, an artificial skin or an artificial cornea.